

Claims

What is claimed is:

1. A sequential processing reaction vessel comprising:

5 a pressure resistant outer housing formed from a microwave transparent material,
said housing being able to withstand at least 150 psi of internal pressure;
 a chemically inert inner housing formed from a microwave transparent material, said
housing positioned within a cavity formed by said outer housing, said inner housing being
resistant to reaction with corrosive liquids at temperatures up to 150° C and pressures up to
10 150 psi;

 a chemically inert membrane filter positioned within said inner housing, said filter
arranged in an essentially horizontal orientation to accommodate placement of a solid
sample material, said filter having a pore size which is smaller than the typical particulate size
of said solid material for retention of said samples, said filter permitting passage of said
15 corrosive liquids;

 a chemically inert, microwave transparent top valve, said valve permitting
introduction of said corrosive liquids to a reactor volume formed by said inner housing; and

 a chemically inert, microwave transparent bottom valve, said valve permitting
removal of said corrosive liquids after reactive contact with said solid sample.